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ABSTRACT

This career exploration instructional unit, one of several resulting from the rural southwestern Colorado CEPAC Project (Career Education Process of Attitude Change), introduces the student to jobs in the environment that are related to life science. Content is in five parts: (1) Part I lists the jobs that may be found in environmental careers and gives some information on salaries and job availability (tables and graphs comparing job availability in 1970 and 1975 are included); (2) Part II gives a brief description of 33 environmental jobs related to life science; (3) Part III briefly describes tasks for students to do in a 2-acre field for each of 12 environmental jobs demonstrating to students what these jobs entail; (4) Part IV is one page on which a plan for evaluating learning outcomes is briefly described; and (5) Part V consists of 10 pages identifying sources of information on jobs in the environment. (EM)

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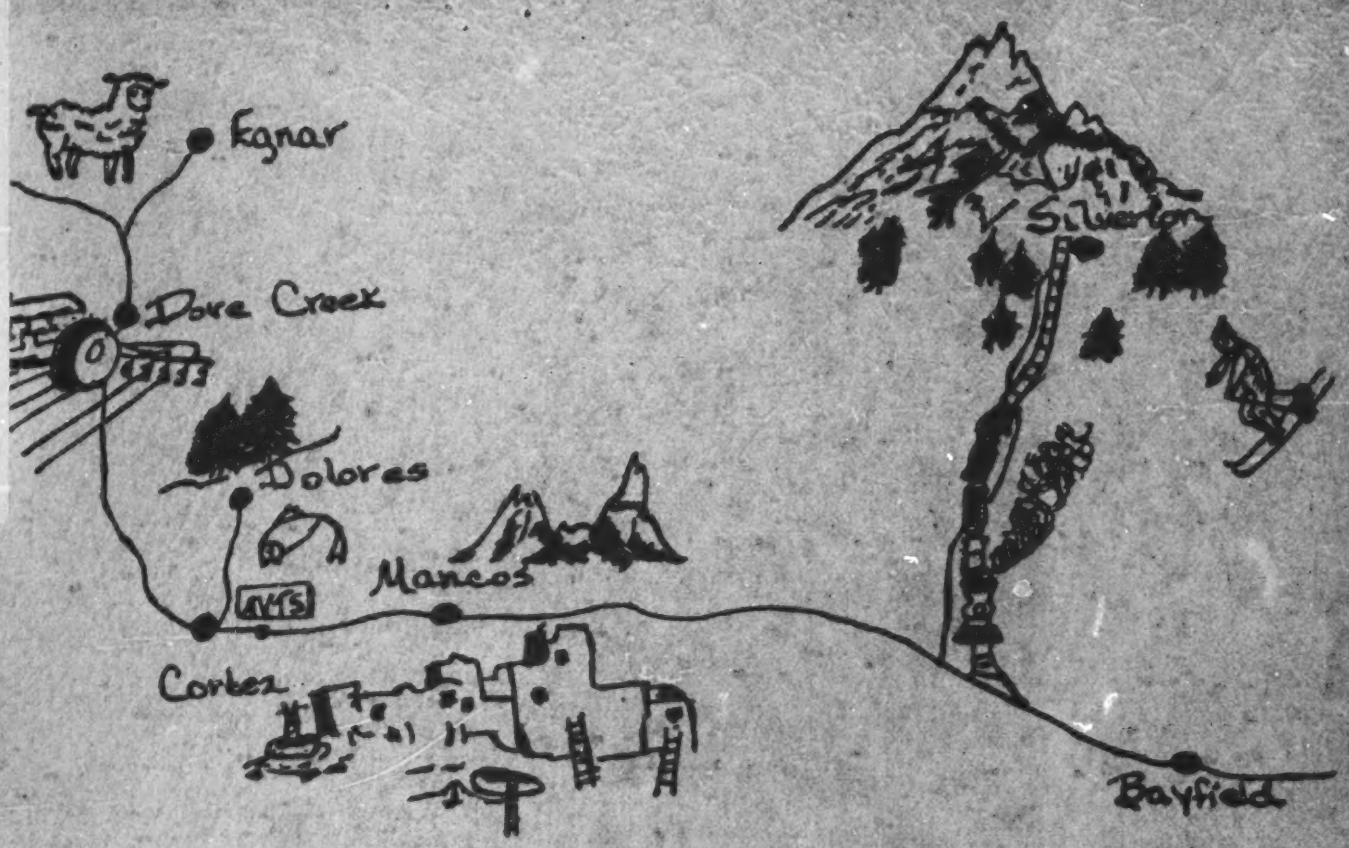

C A R E E R U N I T

Careers in the Environment

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U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

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CEPAC: Career Education-
A Process of Attitude Change

San Juan Basin Area
Vocational-Technical School
Cortez Colorado

CE 011 683

OBJECTIVES:

1. To make the students aware of the jobs in the environment.
2. The student will be come familiar with the objectives of the job.
3. The student will do work in each of 36 jobs in the environment .ield under "Life Science" .

INTRODUCTION

This unit is to introduce the different types of jobs related to "Life Science" in the environment.

Part I will list jobs that may be found in Environment Careers and give some information on the availability of the jobs and the salaries.

Part II will give a brief description of the jobs one will find in "Life Science". These will also be the jobs that this class will be looking at.

Part III will give a description of the jobs one will find in the field of science in the environment.

Part IV is an over-all evaluation.

Part V gives sources of information on jobs in the environmental science.

Part I.

CAREERS IN THE ENVIRONMENT

Every occupation has some type of environmental aspect. Botanists, chemists, and others in the Science Field are directly involved in environmental affairs. Others, such as businessman, secretaries, and housewives, are indirectly involved. The more society becomes aware of the challenge the more it attempts to clean up its pollution and conserve the resources.

Many of the careers are old and familiar such as range managers and oceanographers. But many more are developing - air pollution analyst or a reclying technician - with many more to emerge as society takes environmental challenge more seriously. Following is a list of many of the careers in environment.

A. Careers in Environmental Science -

1. Life Scientists

a. Agriculturist
b. Agronomist
c. Animal Ecologist
d. Animal Husbandryman
e. Aquatic Biologist
f. Biochemist
g. Biophysicist
h. Biostatistician
i. Botanist
j. Cytologist
k. Forest Ecologist
l. Geneticist

m. Horticulturist
n. Microbiologist
o. Pathologist
p. Pharacologist
q. Physiologist
r. Zoologist

2. Physical Scientists

a. Analytical Chemist
b. Assayer
c. Astronomer
d. Geodetist
e. Geophysicist
f. Hydrographer
g. Inorganic Chemist
h. Metallurgist
i. Meteorologist
j. Mineralogist
k. Oceanographer
l. Organic Chemist
m. Physicist
n. Seismologist
o. Soil Scientist

3. Social Scientists

a. Anthropologist
b. Economist
c. Geographer
d. Mathematician
e. Political Scientist
f. Psychologist
g. Sociologist
h. Statistician
i. Writer

B. Environmental Careers in Education and Technology

1. Educators

a. Biology teacher
b. Camp counselor
c. Chemistry teachers
d. Geography teacher
e. Geology teacher
f. Humanities teacher
g. Life Science teacher
h. Physical Science teacher
i. Physics teacher
j. Physiology teacher
k. Public Health educator
l. Social Science teacher
m. Vocational teacher

2. Environmental Engineers

a. Aeronautical
b. Agricultural
c. Chemical
d. Civil
e. Combustion
f. Electrical
g. Environmental
h. Geological
i. Hydraulic
j. Industrial
k. Industrial Safety
l. Mechanical
m. Mining
n. Nuclear

3. Environmental Health

a. Dietician and Nutritionist
b. Field Health office
c. Hygienist - Physician
d. Sanitation
e. Toxicologist

4. Environmental Planners

   a. Architect
   b. Landscape Architect
   c. Urban Planners

5. Natural Resource Managers

   a. Fish and Game Warden
   b. Forester
   c. Oceanographer
   d. Park Ranger
   e. Range Manager
   f. Soil Conservationist
   g. Watershed Manager
   h. Wildlife Manager

C.. Careers in Environmental Technology and Implementation

1. Inspectors or Monitors

   a. Environmental Inspector
   b. Food and Drug Inspector
   c. Health Monitor
   d. Nuclear Inspector

2. Technicians

   a. Biological
   b. Environmental
   c. Food
   d. Health
   e. Horticultural
   f. Land-use
   g. Nuclear
   h. Physical Science
   i. Resource Conservation

3. Tester or Analyst

   a. Environmental
   b. Mechanical

D. Careers in Environmental Application and Operation

1. Laborers - Attendants

   a. Gardner
   b. Incinerator Attendant
   c. Janitor
   d. Refuse Collector
   e. Resource Developer
   f. Wildlife Attendant

2. Operators and Foreman

   a. Incinerator Foreman
   b. Power Plant Operator
   c. Land-fill Operator
   d. Recycling Operator
   e. Water and Sewer System Foreman
   f. Water Treatment Operator

ESTIMATED JOB REQUIREMENTS
FOR SELECTED OCCUPATIONS
1970-1975

Classification	1970 Estimated Job Requirements	1975 Estimated Job Requirements	Percent Change 1970-75	Average Annual Openings	Estimated Replacement Needs
Science and Research					
Life Sciences					
Life Scientists	181,600	210,600	16.0	5,000	9,400
Biochemists	12,000	14,500	20.8	500	200
Physical Sciences					
Astronomers	1,500	1,750	16.7	50	50
Chemists	142,000	172,000	21.1	6,000	6,800
Geologists	23,600	25,600	8.5	400	400
Geophysicists	7,100	7,850	10.5	150	150
Oceanographers	6,000	8,000	33.3	400	100
Meteorologists	4,200	4,700	11.9	100	100
Physicists	49,600	61,800	24.1	2,400	2,200
Social					
Anthropologists	3,200	3,700	15.6	100	100
Economists	33,800	40,200	20.7	1,400	800
Geographers	4,100	4,600	12.2	100	100
Political Scientists	12,300	14,550	18.3	450	350
Mathematicians	72,000	89,500	24.3	3,500	4,900
Sociologists	10,600	12,100	14.1	300	300
Statisticians	24,800	29,300	34.4	900	700
Education and Technology					
Engineers					
Aerospace	66,800	71,300	6.7	900	500
Agricultural	12,400	13,400	8.1	200	200

Classification	1970 Estimated Job Requirements	1975 Estimated Job Requirements	Percent Change 1970-75	Average Annual Openings	Estimated Replacement Needed
Chemical	52,200	57,700	10.5	1,100	500
Civil	194,800	231,800	19.0	7,400	4,100
Industrial	131,000	158,500	21.0	5,500	1,700
Mechanical	225,400	251,400	11.5	5,200	3,400
Mining	5,050	5,175	2.5	25	75
Electrical	249,000	296,500	19.1	9,500	3,000
Health					
Dieticians	32,000	37,000	15.6	1,000	1,700
Physicians	321,000	386,000	20.2	13,000	7,000
Sanitarians	10,600	12,100	14.1	300	300
Natural Resource Managers					
Foresters	26,200	29,200	11.4	600	400
Forestry Aides	14,200	17,200	21.1	600	300
Range Managers	4,200	4,700	11.9	100	100
Planners					
Architects	36,600	43,100	17.8	1,200	1,000
Landscape Architects	9,000	10,250	13.9	250	250
Urban Planners	8,200	11,200	36.6	600	200
Technology and Implementation					
Technicians					
Engineering and Science	664,000	774,000	16.6	22,000	9,000
Instrument Repairmen	93,000	105,300	16.0	2,900	1,700
Equipment Operation					
Inspectors - Manufacturing	593,400	614,600	3.5	4,200	15,000

Classification	1970 Estimated Job Requirements	1975 Estimated Job Requirements	Percent Change 1970-75	Average Annual Openings	Estimated Replacement Needs
Stationary Engineers	262,500	268,750	2.4	1,250	5,000
Waste Water Treatment Plant Operators	26,300	33,300	26.6	1,400	1,100

Based on projections made in Occupational Manpower and Training Needs, Bulletin 1701, U.S. Department of Labor, Bureau of Labor Statistics, 1971. BLS estimated employment in 1968 was adjusted by the average annual openings 1968 to 1980 to obtain 1970 and 1975 estimated requirements.

Estimated replacement needs are not reflected in the estimated job requirements. This information is provided only to give some idea of the number of workers who will be required for replacement of those who retire, die, terminate, etc.

SOME SALARY BASICS

Salaries for animal ecologist, zoologist, entomologist or botanist, microbiologist, or plant biologist are all about the same.

Bachelors Degree		Masters Degree	
1968	1975	1968	1975
$5,732 - 6,981	$7,500 - 9,000	$6,981 - 10,203	$20,000 - 25,000

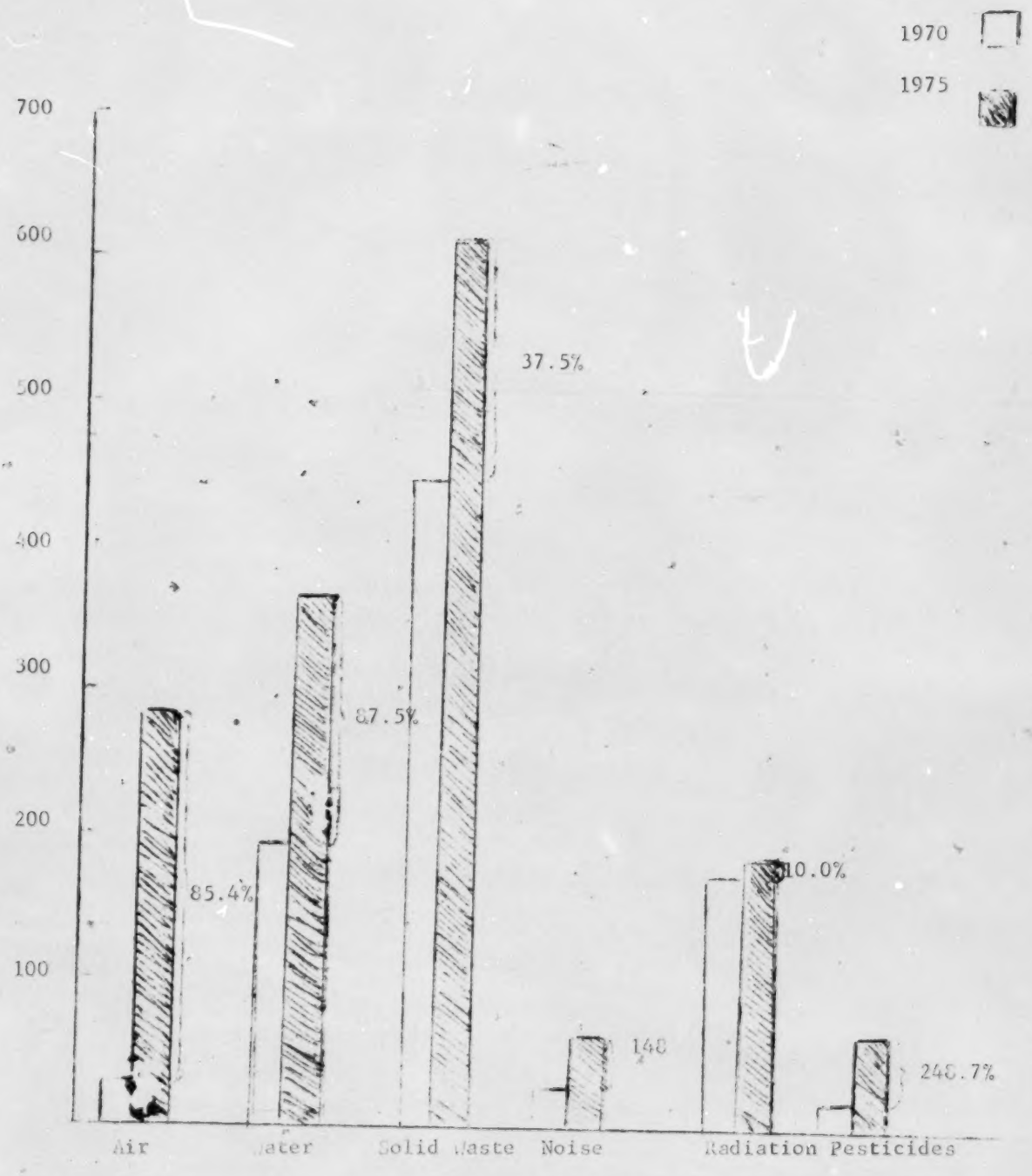
The aquatic biologist holding:

Bachelor's		Master's	
1968	1975	1968	1975
$7,456 - 9,078	$12,000	$9,078 - 10,154	$18,000

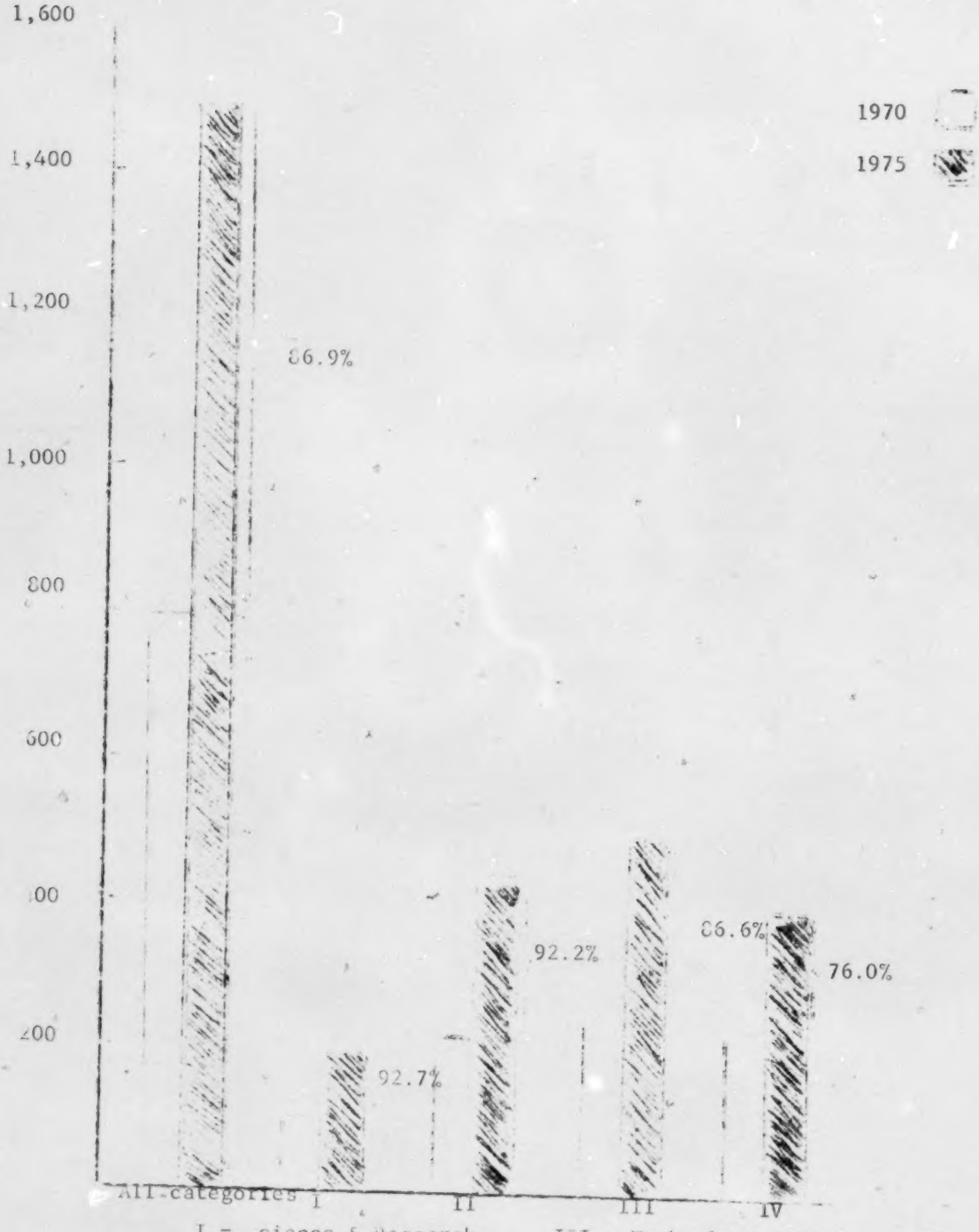
PH.D

1968	1975
$11,565 - 12,500	$30,000

Estimated Growth of Required Jobs by
Environmental Pollution Control Area
1970 - 1975



Estimated Growth of Required Jobs in Four Categories of Environmental Occupations for Six areas of Pollution Control. 1970-75



I = Science & Research
II = Education & Technology
III = Technology & Implementation
IV = Operation & Application

ESTIMATED ENVIRONMENTAL JOB REQUIREMENTS BY MAJOR OCCUPATIONAL CATEGORY AND SIX AREAS OF POLLUTION CONTROL, 1970-1975

Environmental Occupational Category / Function	Total	Air	Water	Solid Waste	Noise	Radiation	Pesticide
1970 Estimate							
Science & Technology	100.00	4.6	20.4	52.5	5.5	14.4	2.6
Technology & Education	222.3	10.2	44.6	116.2	12.2	32.1	5.6
Technology Implementation	255.2	9.7	75.6	137.4	6.7	19.3	6.5
Equipment Operation	224.6	5.8	57.7	144.5	1.9	9.7	5.0
Total	802.1	30.3	197.7	452.6	26.3	75.5	19.7
1975 Estimate							
Science & Technology	192.7	44.1	38.2	72.2	13.5	15.8	8.9
Technology & Education	427.3	97.2	82.5	162.5	30.1	35.3	19.7
Technology Implementation	483.9	92.3	141.7	188.9	17.0	21.3	22.7
Equipment Operation	395.2	55.5	108.2	198.7	4.7	10.7	17.4
Total	1,499.1	289.1	370.6	622.3	65.3	83.1	68.7
1970-75 Average Annual Growth							
Science and Technology	18.5	7.9	3.6	3.9	1.5	0.3	1.3
Technology & Education	41.0	17.4	7.7	8.9	3.6	0.6	2.6
Technology Implementation	45.8	16.6	13.2	10.3	2.1	0.4	3.2
Equipment Operation	34.1	9.9	10.1	10.8	0.6	0.2	2.5
Total	139.4	51.8	34.6	33.9	7.8	1.5	9.8

Note: This table represents new jobs only between 1970 and 1975 and does not attempt to determine replacement needs.

PART II

Life Science Requirement

Biological Science:

This group includes occupations concerned with research in the reproduction, growth, evolutionary structure, life processes, behavior, and classificatoon of living organisms. The biological scientist is mainly concerned with the application of his findings to the prevention of disease and with the maintenance and promotion of health in both plant and animal life. His scientific studies also include investigation into the economic utilization of the harmful aspect of specfic animals or plants.

Aquatic Biologist:

The aquatic biologist studies the interaction of plants and animals living in water. All conditions of the aquatic environment, water temperature, oxygen content, light, food availability, are his concern. The delicate ecological balance can easily be upset, and the aquatic biologist studies methods of achieving or maintaining balance

Pharmacologist:

The effects of drugs, gases, poisons, dust, air pollution, and other substances upon the functioning processes of tissues and organs are the research field for a pharmacologist.

Physiologist:

The Physiologist studies and conducts research pertaining to the structure and functions of animal organs, tissue, and cells. He studies the life processes and the effects of these processes as they relate to environmental problems.

Biochemist:

Biochemists study all living organisms and biological processes. They are primarily involved in a research-oriented profession that studies the impact of chemical change on plants and animals. Biochemists isolate, analyze, identify and report on the materials that affect the operation of living organisms. The biochemists have a primary responsibility to evaluate chemical pollution and suggest remedial action. The work is predominantly indoors, usually in a laboratory or research facility, and requires considerable concentration, patience, and attentiveness.

Biophysicist:

The biophysicist is trained in biology and physics. He is concerned with the physical principles of living organisms and living cells. He studies the organisms response to such physical forces as heat, light, radiation, sound, and electricity. He frequently uses such highly sophisticated equipment and instruments as nuclear reactors or special electron microscopes to study the effects of radioactive particles on tissue cells, which make the studied tissues visible down to the smallest unit.

Biostatistician.

The biostatistician exerts his influence by planning survey projects, collecting and analyzing data, and summerizing and reporting his findings related to biological phenomena. He is particularly interested in descriptive measureable data pertaining to animals, plants, and the life processes of humans.

Cytologist:

The study of plant and animal cells is the special interest of the cytologist. He studies parts of living cells as well as the details of cell division into new cells, using special dissecting equipment.

Geneticist:

Hereditiary characteristics of plants and animals are the special areas of study for the geneticist. He is particularly involved in the physiologicial improvement of plants and animals.

Microbiologist:

The microbiologist is involved in the study of the growth, structure, and general characteristics of bacteria, viruses, molds, and other organisms of microscipic or submicroscopic size.

Pathologist:

The degeneration or abnormal functions in humans, animals, or plants is the concern and particular area of study of the pathologist. He researches the nature, cause, and development of disease.

Zoologist:

The zoologist studies animals, their life organs, and their life processes. He is concerned about animal diseases, parasites, and behavior patterns.

Animal Ecologist:

The animal ecologist is concerned with the relationship between animal life and its' immediate surroundings. He studies the life cycles of animals and attempts to determine how environmental factors such as plant growth, moisture, weather and altitude affect the existence of various groups.

Animal Husbandryman:

The animal husbandryman is primarily concerned with the production and care of domesticated animals. He conducts research into the breeding, selection, feeding, marketing, and other managerial functions concerning animals.

Entomologist:

The insect and its relationship to plant and animal life is the primary interest of the entomologist. He studies, identifies and classifies the various types and kinds of insects.

Agriculturist:

An agriculturist is concerned with both the theorectical and the actual practices of agriculture. The general nature of his work is to provide technical information and to assist others in solving a wide range of problems.

Agromonist

He is interested in developing crops of higher quality under conditions of more efficient methods of production. At the same time he strives to maintain or increase the crops out-put.

Botanist:

Studies all aspects of plant life. He is mainly concerned with heridity and physiology of plants but is also interested in the economic value of plant life. Botanists usually specilize.

Forest Ecologist:

Conducts research and studies vegetation, plants, trees and environmental factors that affect the forest. He attempts to determine what conditions account for the prevalence or absence of different varieties of trees.

Astronomer:

He observes, studies, and interprets the phenomenum that occur within and outside the Universe. He also interprets research and basic scientific knowledge for application to such pratical problems as in navigation.

Seismologist:

He studies the structure of the earth's interior and the vibrations of the earth caused by earthquakes, volcanic eruptions, and man made explosions.

Analytical Chemist:

He is involved in conducting research to develop or improve analytical techniques, methodology, and procedures. He is particularly active in the investigation and application of instruments to analyticial procedure in determining chemical and physical properties of organic and inorganic compounds. He helps establish and improve procedures for quality control tests and analysis.

Inorganic Chemist:

Primarily conducts experiments on substances that are free from carbon to develop and improve such materials for production purposes.

Assayer:

The assayer is concerned with testing ores and alloys. He analyzes the results of the test and determines the values and properties of precious metals.

Geologist:

Studies the structure, composition, and history of the earth's crust. A geologist prepares reports, articles and maps of surface and subsurface phenomena.

Geodetist:

The geodetist is concerned with studying and measuring the size, shape and movement of the earth. He determines the position and elevations of points on or near the earth's surface and measures the intensity and direction of gravitational attraction.

Geophysicist:

Studies and analyzes the earths' atmosphere and hydrosphere to determine the effect that changing climatic, thermal, seismic, radiation, pollution, and electric conditions have on the earth.

Hydrographer:

Performs activities primarily related to the study of water resources. He samples, measures, and tests river levels, water flow, silt accumulation, water temperature, and water control equipment.

Metallurgist, Physical:

Is concerned with investigating the properties and treatment of metals in order to develop new alloys. He is also involved with developing new uses for existing metals and alloys and is particularly concerned with developing methods for their commercial use.

Meteorologist:

Studies the atmospheric phenomena of the earth. He is interested in and attempts to describe and explain the motions, components, influences, and processes of the atmosphere.

Mineralogist:

Examining, analyzing, and classifying minerals such as gems and precious stones are the special interests of the mineralogist. He is also concerned with developing data and theories on the mode of origin, the observance and the possible use of minerals.

Oceanographer:

Studies the ocean, its' contents, and its' movements. He plans and conducts extensive tests and surveys.

Physicist:

Works in either theoretical or experimental physics or in applied basic research. Three fields are interdependent, and the difference is largely dependent upon the emphasis placed by the physicist. (Theorectical, experimental, and applied.)

Soil Scientist:

Is concerned with soil productivity and the management of soil. Classifies soil and determines the soil capabilities.

Part III

The next few pages cover a short description of the jobs one may find in the field of Science in the Environment. The remainder of the project will take some of the jobs and work them into the evaluation of a few acres of land to show the students what each of these jobs would amount to. . .

Field Work

The class will need a two acre field to do this project.

The class will work on this two acre field and do a total work-up of the plot keeping records of each finding as they cover the jobs in the Life Science area of Environment Careers.

I. Biological Sciences:

In this study the students will examine the economic value of the plants and animals in the study plot. The class will also have to keep growth records of some plants and some animals; also reproductive curves. This work will be started later as other major work is completed.

II. Aquatic Biologist:

This job may be studied if water is located on the two acre plot. In this area, if water is present, the students will take samples and study and record temperature, oxygen content, light, and balance of aquatic life over a 9 month period. If no water is found on the plot one may look at the water found in plant cups and found only at set times of the year.

III. Biochemist:

The group will analyze both the soil and water for chemicals and determine the effect of them and their value.

IV. Biostatistician:

This job will have to be one of the first to be studied because all other jobs will have to have records kept on a time period. Each amount of time will be determined by the job and the record needed.

V. Both Microbiologist and Pathologist

One needs to study both micro-life and type with relationship to abnormal functions in the life forms found in the area; also micro that may help the area become richer in production.

VI. Animal Ecologist:

The student will study the relationship of animal life to each other as well as to plant life and note the value of each animal to his environment - also note the feed webs and energy flow.

VII. Agriculturist

Will study the type of agriculture found in the area and the types of agriculture that may be put into the plot, also the effect it has on the life in the area. One will have to have both plant and animal life counts before and after.

BIII. Botanist

Student will make a study of most plant life, also run plant population counts and work with the biologist on growth. He will also study the changes in plant life during the year.

IX Forest Ecologist:

In this project the student will set up a study of the interrelationship of the plant and animals. This person will have to work closely with the zoologist and the botanist.

X. Geologist and Assayer:

In this study they will note the geological formations of the area and how they were formed and test the alloys and minerals found in the area. After this they will determine the best use for the area.

XI. Meterologist:

In this a group will moniter the weather in the test area for the year, keeping records and up-date of weather forecast. They will look at the difference between the forecast and the weather, noting why it changed.

XI. Soil Scientist:

This person or group will test the soil make up and types, analyizing what may help the test area over a long period of time.

Part IV

Over .ll Evaluation

In this project the teachers will have the twelve different jobs for a few weeks. .fter the time period the students will change job rolls and take over the records that were started by the last student. This changing will continue until a student has covered the many different jobs in the outline.

The final outcome should be a two acre plot that has a total record showing what it is made up of, what is found in the area, its' affect on the area, and a knowledge of twelve jobs related to Life Science in the environment.

It should also show the importance and relation to the jobs in record keeping and many areas of basic math.

The students should also emerge with a strong understanding of the need for interrelationship between jobs as well as people, knowing that each job one will have a carry over from the last person working on that job.

Part V

Added Sources of Information

For Teaching Career Education

in Environmental Science

AERONAUTICS

American Institute of Aeronautics and Astronauts, Inc.
1290 Avenue of the Americas
New York, New York
10019

AGRICULTURE

American Society of Agricultural Engineers
P.O. Box 229
Joseph, Michigan
40985

AIR POLLUTION

National Air Pollution Control Administration
Box 1255
Research Triangle Park, North Carolina
27709

ANTHROPOLOGY

American Anthropological Association
1703 New Hampshire Avenue, N.W.
Washington, D.C.
20009

ARCHITECTS

American Institute of Architects
1735 New York Avenue, N.W.
Washington, D.C. 20006

American Society of Landscape Architects, Inc.
2013 I Street, N.W.
Washington, D.C.
20006

Association of College Schools of Architecture
521 18th Street, N.W.
Washington, D.C.
20006

BIOLOGY

American Institute of Biological Sciences
200 P Street, N.W.
Washington, D.C. 20036

BIOLOGY, con't.

Federation of American Societies for Experimental Biology
950 Wisconsin Avenue
Bethesda, Maryland 20014

CHEMISTRY

American Chemical Society
1155 16th Street, N.W.
Washington, D.C. 20036

Manufacturing Chemist's Association, Inc.
1825 Connecticut Avenue, N.W.
Washington, D.C. 20009

CONSERVATION EDUCATION

Conservation Education Association
c/o Secretary
1144 East 3rd Street
Salt Lake City, Utah 84102

DIETETICS

American Dietetic Association
620 North Michigan Avenue
Chicago, Illinois 60611

ECOLOGY

Ecological Society of America
c/o Secretary
Radiation Ecology Section
Oak Ridge National Laboratory
Oak Ridge, Tennessee 37831

Economics

American Economic Association
Northwestern University
629 Noyes Street
Evanston, Illinois 60201

ENGINEERS

American Institute of Chemical Engineers
345 East 47th Street
New York, New York 10017

ENGINEERS, con't.

American Institute of Industrial Engineers
345 East 47th Street
New York, New York 10017

American Society of Civil Engineers
345 East 47th Street
New York, New York 10017

American Society of Engineering Education
200 Pennsylvania Avenue, N.W.
Washington, D.C. 20037

American Society for Mechanical Engineers
345 East 47th Street
New York, New York 10017

National Society of Professional Engineers
2029 K Street, N.W.
Washington, D.C. 20006

Society of Mining Engineers of the American Institute of Mining, Metallurgical, and Petroleum Engineers
345 East 47th Street
New York, New York 10017

FISHERIES MANAGEMENT

American Fisheries Society
1404 New York Avenue, N.W.
Washington, D.C. 20005

FORESTRY

U.S. Department of Agriculture
Forest Service
Washington, D.C. 20250

American Forest Institute
1835 K Street, N.W.
Washington, D.C. 20006

Society of American Foresters
1010 16th St. N.W.
Washington, D.C. 20036

GEOGRAPHY

Association of American Geographers
1146 16th Street N.W.
Washington, D.C. 20036

GEOPHYSICS

American Geophysical Union
2100 Pennsylvania Avenue, N.W.
Washington, D.C. 20037

Society of Exploration Geophysicists
P.O. Box 3098
Tulsa, Oklahoma 74101

HEALTH

AmericanPublic Health Association, Inc.
1740 Broadway
New York, New York 10019

Institute for the Study of Health and Society
2199 North Decatur Road
Decatur, Georgia 30033

National Environment Health Association
1600 Pennsylvania Street
Denver, Colorado 80203

National Sanitation Foundation
P.O. Box 1468
Ann Arbor, Michigan 48106

MEDICINE

Association of American Medical Colleges
2530 Ridge Avenue
Evanston, Illinois 60201

American Medical Association
535 North Dearborn Street
Chicago, Illinois 60610

METEOROLOGY

American Meteorlogical Association
Second and B streets, S.E.
Washington, D.C. 20032

OCEANOGRAPHY

American Society for Oceanography
854 Main Building
Houston, Texas 77002

American Society for Limnology and Oceanography
W.K. Kellogg Biological Station
Michigan State University
Hickory Corners, Michigan 49060

International Oceanographic Foundation
1 Rickenbacker Causeway
Virginia Key
Miami, Florida 33149

Office of Environmental Sciences
Smithsonian Institution
Washington, D.C. 20560

National Oceanography Association
1900 L. Street, N.W.
Washington, D.C. 20036

OUTDOOR RECREATION AND PARKS

American Political Science Association
1527 New Hampshire Avenue, N.W.
Washington, D.C. 20036

RESOURCE ECONOMICS

Resources of the Future, Inc.
1755 Massachusetts Ave. N.W.
Washington, D.C. 20036

RESOURCE MANAGEMENT

The Conservation Foundation
1250 Connecticut Ave. N.W.
Washington, D.C. 20036

SOCIOLOGY

American Sociolgical Association
1001 Connecticut Ave. N.W.
Washington, D.C. 20036

SOIL CONSERVATION

Soil Conservation Society of America
7515 N.E. Ankeny Road
Ankeny, Iowa 50021

STATISTICS - MATHEMATICS

American Statistical Association
806 15th Ave. N.W.
Washington, D.C. 2005

TECHNICIANS

National Council of Technical Schools
1835 K Street N.W.
Room 907
Washington, D.C. 20006

U. S. Department of Health, Education, and Welfare Office of Education
Division of Higher Education and/or Division of Vocational & Technical Education
Washington, D.C. 20202

URBAN PLANNING

American Institute of Planners
917 15th Street, N.W.
Washington, D.C. 20005

American Society of Planning Officials
1313 East 60th Street
Chicago, Illinois 60637

WATER POLLUTION

Water Pollution Control Federation
3900 Wisconsin Avenue, N.W.
Washington, D.C. 20016

WILDLIFE CONSERVATION AND MANAGEMENT

The Wildlife Society
Suite S-176
3900 Wisconsin Avenue, N.W.
Washington, D.C.
20016

National Wildlife Federation
1412 16th Street, N.W.
Washington, D.C.
20036

FEDERAL AGENCIES AND STATUTES

A. TEXTS

Bureau of National Affairs. ENVIRONMENTAL REPORTER. Washington, D.C.: The Bureau of National Affairs, 1231 25th St. N.W. $340 a year. Published weekly. Comprehensive source of laws, cases, new developments, existing programs and agencies.

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FEDERAL AGENCIES

Department of Agriculture
Agricultural Research Service, Agricultural Stabilization and Conservation Service, Cooperative State Research Service, Economic Research Service, Farmers Home Administration, Forest Service, Soil Conservation Service.

Appalachian Regional Commission

Atomic Energy Commission

Department of Commerce
Economic Development Administration, Environmental Science Services Administration, National Bureau of Standards

Delaware River Basin Commission

Department of Defense
Army Corps of Engineers

Environmental Protection Agency

Executive Office of the President
Council on Environmental Quality, Office of Science and Technology.

Federal Power Commission

Department of Health, Education, and Welfare
Environmental Health Service, Environmental Control Administration, Food and Drug Administration, National Institutes of Health, Office Education.

Department of Housing and Urban Development

Department of the Interior
Bonneville Power Administration, Office of Coal Research, Bureau of Sport Fisheries and Wildlife, U.S. Geological Survey, Bureau of Indian Affairs, Bureau of Land Management, Bureau of Mines, National Park Service, Bureau of Outdoor Recreation, Bureau of Reclamation, Office of Saline Water, Office of Water Resources Research

International Boundary and Water Commission, United States and Mexico

Department of Justice

National Aeronautics and Space Administration

National Science Foundation

National Water Commission

Commission on Population Growth and the American Future

Smithsonian Institute

Department of State

Tennessee Valley Authority

Department of Transportion
U.S. Coast Guard, Federal Aviation Administration

Water Resources Council

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